



DATE: December 6, 2000

TO: Interested Parties

FROM: Nancy Tronaas, Compliance Project Manager

SUBJECT: Public Review of Staff Analysis of the Petition for Proposed Modifications for the La Paloma Generating Project (98-AFC-2C) to Correct Condition of Certification AQ-5, and to Change the Vendor for the Zero Discharge Boiler

The La Paloma Generating Project (Project), a nominal 1048 MW natural-gas-fired power plant under construction near the town of McKittrick in Kern County, California, was approved by the California Energy Commission (Energy Commission) on October 6, 1999, and amended by the Energy Commission on March 22, 2000. On November 3, 2000, the La Paloma Generating Company filed a petition in accordance with Section 1769(a) of the California Code of Regulations to modify the Energy Commission Decision and Amendment for the following:

1. To correct air quality Condition of Certification AQ-5 to eliminate an inconsistency with AQ-40 concerning the placement of sampling ports to be used for monitoring nitrogen oxides (NO_x) and ammonia emissions from the gas turbines, and
2. To modify the description of the natural-gas-fired boiler to be used in the zero discharge wastewater treatment system and the addition of one new air quality condition (AQ-78) to limit daily fuel use by the new boiler.

Energy Commission staff reviewed the petition and prepared the enclosed analysis of the proposed changes. This analysis provides staff recommendations for revised/new project conditions of certification that will ensure that the proposed modifications will not cause any new or additional significant environmental impacts, and that the project will remain in compliance with all applicable laws, ordinances, regulations, and standards. Based on the results of this analysis, Commission staff intends to recommend approval of the petition at the January 10, 2001 Business Meeting of the Energy Commission.

If you have technical questions concerning the enclosed staff analysis, please contact Gabriel Behymer at (916) 654-4482 or by e-mail at gbehymmer@energy.state.ca.us. If you have questions concerning the amendment process, please call me at (916) 654-3864 or by e-mail at ntronaas@energy.state.ca.us.

If you wish to submit written comments concerning the enclosed staff analysis, your comments must be received no later than January 5, 2001.

Enclosure

La Paloma Generating Project (98-AFC-2C)

Air Quality Staff Analysis: Petition for Proposed Air Quality Modifications (Dated October 24, 2000)

Prepared by: Gabriel D. Behymer

SETTING

On November 3, 2000, the California Energy Commission (Energy Commission) received a petition from the La Paloma Generating Company (LPGC) for two changes to the Conditions of Certification for the La Paloma Generating Project (Project). First, LPGC requested correction of a contradiction between Conditions of Certification AQ-5 and AQ-40. Second, LPGC requested Conditions of Certification AQ-62 through AQ-77 be updated to reflect the selection of a new zero discharge waste water boiler and that a new Condition of Certification (AQ-78) be added to regulate the operations of this boiler.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

If these modifications to the Conditions of Certification are approved, the Project will remain in compliance with all applicable LORS.

ANALYSIS

CORRECTION TO AQ-5

AQ-40 specifies the methods for measuring the ammonia slip (unreacted ammonia emitted to the atmosphere) from each selective catalytic reduction (SCR) system and allows the project owner to choose from two alternative measurement methods. The first option is to use two oxides of nitrogen (NOx) continuous emissions monitors (CEM), one upstream and one downstream of the SCR, to measure the NOx reduction over the SCR and then use specific calculation methods to estimate the ammonia slip based on the ammonia injection rate. The second option is to install a dedicated CEM to measure the ammonia slip directly. The two methods are technically equivalent.

AQ-5, however, specifically requires that each gas turbine exhaust be equipped with two NOx monitors, one upstream and one downstream of the SCR. This contradicts the language in AQ-40 that requires only a NOx monitor downstream of the SCR if the project owner chooses to install a monitor that directly measures ammonia slip.

The project owner proposes revising AQ-5 to bring it into agreement with AQ-40. Staff believes this was the intent of the conditions and proposes the modifications below. The modified condition will require one NOx CEM if the project owner chooses to install an ammonia CEM, and will require two NOx CEM (one upstream and one downstream of the SCR) if the project owner chooses to use the ammonia slip calculation method based on the ammonia injection rate.

In addition, the project owner proposed changes to the list of emissions sources prior to AQ-1 in order to reflect changes to the San Joaquin Valley Unified Air Pollution Control District (District) permit numbers. However, these changes were already approved by the Energy Commission (Order #00-0322-03) on March 22, 2000 as a component of the amendment to add the new boiler. The District permit revision number is no longer included in the AQ Conditions of Certification, only the unit number.

CHANGE OF BOILER VENDOR

The project owner has determined that the vendor for the originally specified Cleaver-Brooks boiler will not be able to provide the necessary vendor guarantees to comply with the emissions limits. The project owner has therefore identified another boiler vendor, Clayton Industries, to provide an equivalently sized boiler with the necessary guarantees.

Since the Clayton Industries model EG-154-1-LNB boiler is rated at 6.4 MMBtu/hr, 0.2 MMBtu/hr higher than the previously analyzed Cleaver-Brooks boiler, the project owner has agreed to limit the fuel use to 148.8 MMBtu/day (i.e., the previous maximum daily fuel consumption of 6.2 MMBtu/hr times 24 hours). This will prevent any increase in emissions. Staff proposes adding one new Condition of Certification (AQ-78) to limit the daily fuel use by the new boiler.

The only other necessary change to the Conditions of Certification will be to modify the boiler description text preceding AQ-62, as detailed below.

CONCLUSIONS AND RECOMMENDATIONS

The requested modifications to the Conditions of Certification will not result in impacts on air quality. Staff recommends approval of this request and proposes the following changes and additions to the Conditions of Certification for the La Paloma Generating Project.

CHANGES TO EXISTING CONDITIONS OF CERTIFICATION

Staff recommends the following changes to the Conditions of Certification. Added text is **bold and double underlined**, deleted text is shown as ~~highlighted and strikethrough~~.

AQ-5 Gas turbine engine exhaust shall be equipped with continuously recording emissions monitor for NO_x ~~(before and after the SCR unit, if installed)~~, CO, and O₂ dedicated to each permit unit. **Gas turbine engine exhaust shall be equipped with an additional CEM for NO_x upstream of the SCR unit, or alternatively, a continuously recording ammonia monitor, as required by AQ-40.** Continuous emission monitors shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. [District Rule 2201]

The following conditions (Conditions AQ-62 through AQ-~~77~~ **78**) shall apply to the following unit:

SJUVAPCD Unit No. S-3412-12 **13** - **6.2 MMBTU/HR NATURAL GAS FIRED CLEAVER BROOKS MODEL CBW7XX 150 150 BOILER WITH POWER FLAME/ALZETA BURNER AND FLUE GAS RECIRCULATION 6.4 MMBTU/HR CLAYTON MODEL EG-154-1-LNB NATURAL GAS FIRED BOILER, OR CPM APPROVED EQUIVALENT**

NEW CONDITION OF CERTIFICATION

Staff recommends the addition of the following Condition of Certification:

AQ-78 Boiler natural gas consumption shall not exceed 148.8 MMBtu/day.
[District Rule 2201]

Verification: The project owner shall maintain daily records of natural gas consumption and submit a summary of this information to the CPM as part of the quarterly report specified in Condition AQ-28.

GLOSSARY

AFC	Application For Certification
AQ	Air Quality
CEM	Continuous Emissions Monitor
CPM	[CEC] Compliance Project Manager
LORS	Laws, Ordinances, Regulations and Standards
LPGC	La Paloma Generating Company
MMBtu	Million British Thermal Units
NOx	Oxides of Nitrogen
SCR	Selective Catalytic Reduction [system]
SJUVAPCD	San Joaquin Valley Unified Air Pollution Control District